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ABSTRACT

This evaluation focuses on a project concerned with establishing bilingual/bicultural education for New York City children from homes in which English, French, Spanish, or Yiddish is spoken. The goals, strategies, target population, and staff, parent and student activities of the program, which involved pre-kindergarten through fifth grade students in public and private schools, are described. Evaluation methods used to measure student progress in language development and reading, cognitive and social development, mathematics, science, and culture studies are discussed. The measurement and achievement of adult objectives (such as interpersonal growth and professional development) by the teaching staff are also reviewed. The following student achievement data are presented: (1) end of year reading achievement for public and private school groups, grades K-5: (2) pre/post program reading performance, by language dominance (English, French, and Spanish only), grades 2-5: (3) French reading performance, grades K-4: (4) Spanish reading performance, grades 2-5: (5) concept development by language dominance, for public and private school groups, pre-kindergarten: (6) end of year mathematics achievement for public and private school groups, grades K-5: (7) pre/post program mathematics performance, by language dominance, grades 2-5. The all-around positive results of the program are hailed in the evaluation. (GC)

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BILINGUAL EDUCATION AT THE BILINGUAL CENTER, 1977-1978: AN EVALUATION

ESEA TITLE VII PROGRAM

Evaluation of a New York City school district educational project funded under Title VII of the Elementary and Secondary Act of 1965 (PL 89-10), performed with the Board of Education of the City of New York for the 1977-1978 school year.

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July 1978

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PROGRAM DESCRIPTION

This project is concerned with

> establishing bilingual/bicultural education for children from homes in which English, French, Spanish or Yiddish is spoken. The prime goal is to ensure that the non-English speaking children who have participated in the program will function comparably with English dominant children in later school years, and that this achievement will in turn, enable these children to be successful adults in our society while maintaining and developing their language abilities in their first language. Concurrent with this goal is the aim to make English dominant children bilingual. Teachers, paraprofessionals, parents, family assistants, community development workers, and community members will coordinate their activities to fulfill the objectives through class instruction, workshops, visits to homes, meetings and newsletters.

The prime goal is to ensure that children of limited English speaking ability who have participated in the program will function comparably with those students identified as English dominant in later school years. The English linguistic environment provided by the participation of English dominant children, in addition to the adult models, is consistent with the theoretical bases and research evidence on which the program has been developing.

Since this is a continuing program, objectives dealing with

the longitudinal aspects of the program have been identified. Goals for the students have been based on an analysis of the students' present levels of development (linguistic and cognitive) determined by their performance on a variety of tasks in previous years. This diagnostic/developmental approach has been used cooperatively to establish activities which foster the development of the concepts and abilities identified by the program. During this year the program was composed of students in the pre-kindergarten through fifth grade levels.

The program consists of two components, a public school group and a non-public school group. The former enrolls students from pre-kindergarten through grade five. The non-public school component is comprised of students in three schools; i.e., Holy Spirit and Unity Schools enroll French-English students in kindergarten through second grades and Beth Rivka enrolls Yiddish dominant students placed from pre-kindergarten through grade five. The entire program as developed at the Bilingual Center has provided the model for the development of the non-public school component.

All of the students in the program come from homes in which English, French, Spanish or Yiddish is spoken. Priority is given to children of limited English speaking ability. Each year a new grade is added. For 1977-1978 a new fifth grade

was added, a group which has, in the main, been participating in the program since its inception.

To achieve the program's goals, teachers, paraprofessionals, parents, family assistants, community development workers and community members coordinate their activities through class instruction, workshops, home visits, meetings and newsletters. The long range objectives identified for the program are:

1. To improve the verbal communication skills of all students in their first language and to develop comparable ability in a second language, namely English, French, Spanish or Yiddish, thereby making all students truly bilingual.
2. To develop the ability of the students to achieve at or above grade level in reading and math on English standardized tests and on similar measures in French, Spanish or Yiddish.
3. To develop a positive attitude in the students towards learning and towards school.
4. To develop a positive self-image and a respect for both cultures studied (American-English and Haitian-French, Puerto-Rican Spanish or Hassidic-Hebrew).
5. To increase community involvement (particularly parental) in the educational program.

Since this is the sixth year of operation of this project, the students who have participated since its inception who were on pre-kindergarten and kindergarten levels, now are fourth and fifth graders.In addition to the similar progress the other participants have been making, with each passing year a new group was added, more students were added to form four classes on each of grades K, one and two in the public school component, thereby enlarging the impact of the program oh a larger group of students. This expansion was possible due to the larger quarters assigned to the project which will be discussed below.

This year's expanded public school program consists of ten French-English classes: one of four year olds; two of five year olds; two first grade; two second grade; one third grade; one fourth grade and one fifth grade -- with a similar configuration of Spanish-English classes -- a total of twenty classes enrolling over 600 students. Approximately 40% of the students are native speakers of Spanish, 40% are native speakers of French, and the remaining 20% are native speakers of English. Each class is staffed by a full-time teacher and a full-time assistant. Additional paid staff include the director, an assistant coordinator, community liason workers, a science cluster teacher, a reading cluster teacher and numerous part-time parent aides. Additional unpaid personnel include college level student-teachers, college student tutors,

bilingual administrative interns, parents, and other concerned community persons. All of the staff are either appropriately bilingual or maintaining competence in one language while improving their facility in the other language used by the groups they work with.

In addition to the public school segment which has been in operation for six years, the non-public school component which includes English, French and Yiddish dominant groups continues to grow. The bilingual component of these programs was staffed by the Bilingual Center, incorporating a bilingual program similar to that developed at the Bilingual Center.

A parents group meets weekly for language instruction in their non-native tongue, cooperative planning of activities, discussion of the program and common concerns. Many of the parents who have been improving their bilingual abilities, have continued to enroll in educational programs in diverse fields including bilingual education. This year, the fifth graders studying French have been invited to participate in an after-school program to develop their Spanish abilities, thus developing tri-lingual students. This program has been met with great enthusiasm.

The long range goals of the project and the specific objectives for the 1977-1978 school year were developed cooperatively by the adults involved in the program (professionals, paraprofessionals, parents and community members), based on the previous experiences with the program, relevant theories and research findings. The mutual objective-setting process is one indication of the high quality of the organization of this program, i.e., the involvement of all interested parties in the implementation of an educational program.

The school building to which the program moved this year has provided the program with greater cohesiveness and the staff with greater opportunities for interactions. The availability of space for different activities has given the students the opportunity to plan performances for large groups in the auditorium, visit the library for reading and research materials, set art work aside for drying or later attention, meet in small groups in quiet space, etc. Similarly, the teachers have benefitted by the added space and the opportunity to share concerns, solutions, new approaches and ideas with colleagues. The cross-age interaction of the older and younger students has also been increased.

The objectives of this project are primarily concerned with developing the children's bilingual and other school abilities as evidenced by their performance on standardized tests. The

students' ratings on these tests compare these students' performance with a normative group's performance.

Student Objectives

The identified student objectives included:

1. A significantly larger amount of the participating children who have completed the program will perform above grade level in reading and math as measured by standardized tests than a comparable sample of non-participating students.

2. All students will be balanced bilinguals, whose proficiency in listening, speaking, reading and writing a second language, as measured by achievement tests is comparable to their ability in their first language.

3. All Spanish, French and Yiddish dominant children who have participated in the experimental program will develop a more positive self-image and an increased pride in their mother tongue, and in the culture it represents, as reflected in an attitudinal scale used at the beginning and end of the program.

4. All the English dominant children will display an increased appreciation of the Spanish/French/Yiddish language and Spanish/Haitian/Hassidic culture as measured by program prepared tests and the Schaeffer Checklist of Language Abilities.

Evaluation of Student Progress

Student progress has been objectively determined by a variety of measures, both standardized and program prepared. Although we recognize the tremendous limitations of the information provided by scores on standardized tests, they probably have

some value as comparative data. Therefore, we present this data as well as discuss other indications of student progress.

LANGUAGE DEVELOPMENT AND READING

Comparative data based on standardized tests administered in English at the beginning and end of the school year are presented in the Appendix. However, the curriculum focus throughout this project is on learning as a process -- therefore the standardized measures do not reflect students' enjoyment in learning, their progress from one level of understanding to a more abstract one, their creative approaches to problem solving, among other abilities. As comparative data it is interesting to note the students' continued ability to achieve above grade level scores across subject and age groups.

Of significant note is the comparative data provided by a listing of mean reading comprehension scores supplied by the local district office on the New York City Reading Test which was administered in grades two through five. The schools in the district enroll students of comparable background as those in the program. The students in the Bilingual Center achieved the highest mean scores in grades four and five for the entire district. Grade three results were the second highest for the community.

All groups are on grade level with most exceeding this beyond

the scores received by the normative groups. The notation of dominance for the older children is more representative of their home or first language rather than their dominant language. The students have truly developed their language abilities in both languages to a high degree of proficiency based on the provision for this through carefully scheduled activities designed to promote this objective. (However, the term "dominant language" will be used throughout this report to refer to the first, home or native language.) The teachers continue to plan activities in both languages which spark the students' interests while simultaneously developing their language comprehension and fluency. Since the program has been so successful in meeting its objectives it seems valuable to describe some of the activities included in the curriculum, most of which have been cooperatively developed among the teachers in collaboration with the director, using insights from recent theories and research findings in the areas of psycholinguistics and cognitive development.

One major focus of the program has been on the development of language abilities of the students in both languages. Since the language program is viewed as a course in thinking, provision is made for students to use language to explore their understanding of their world. Through this, they are able to use language to adequately convey their ideas. To accomplish these goals teachers provide many opportunities for acting, conversing, playing language games, reading, writing and talking. Students write stories reporting on activities

and creating original narratives in which they are helped to develop a sense of the importance of plot, dialog, and plausible realistic events. The development of a class newspaper was one activity which was greeted with great enthusiasm and proved to be most effective. A concern for following the conventions of punctuation and spelling is conveyed as well, but emphasis is placed on the effectiveness of the communication. Through peer interaction and cross age grouping, students are provided with additional opportunities for individual attention from a concerned audience.

The students have initiated a student council which meets regularly to discuss the functioning of the school, serving as an advisory board to the director and a policy setting group for the students. The representatives from each grade which constitute the council have the opportunity to discuss important issues affecting them with an audience interested in their ideas, regardless of age/grade or language dominance. Through this forum the students gain experience in communicating with different audiences and with different functions (such as hypothesizing, analyzing, synthesizing, etc.) an important component of the language objective.

Reading throughout this program has been approached first through the child's dominant language or first language. Next, as the student recognizes the relationship and differences between

spoken and written language symbol systems, printed materials are presented in his/her second language. Methods used include adult and peer reading aloud and children's individual exploration of books. Some emphasis has been placed on developing each child's vocabulary in meaningful contexts in the second language. Psycholinguistic research has shown that the structures of language and the understanding of word meanings seems to be learned tacitly or unconsciously through use as a listener/speaker/reader/writer. Support for this teaching approach is present in the results of the project as well as published sources.

Reading and writing activities have been integrated throughout the curriculum. As students mature they have been reading longer, more complex books and writing more involved stories. Literature is used as a source of enjoyment, as a different linguistic experience and for increasing student experiences. The students' enthusiasm in all these projects is evident as they share their work with their peers -- and as they help each other improve their ability to convey their ideas and understand others' ideas.

Program prepared tests of reading in French, Spanish and Yiddish using English counter-parts as models were given on a pre-post basis. The data from these are presented in the

Appendix. It is interesting to note the constant growth of both groups (native and non-native speakers). The native speakers seem to maintain their five-year advantage fairly consistently throughout. However, the amazing similarity in the abilities between the two groups is an indication of the effectiveness of the program.

The club program, successfully initiated last year has continued in importance in the students' development. These club activities provide opportunities for students to explore new interests and develop others. An outgrowth of one such activity was a production of The Wizard of Oz, which created great enthusiasm among all those who attended the performances as well as those who participated in the production.

As an instructional aid, the Yiddish component developed and published a book of readings with illustrations, a glossary, and suggested language activities appropriate for their students to encourage the development of their Yiddish language abilities. This procedure was in keeping with the model established in the public school model at the Bilingual Center.

The older students in grades four and five served as reading tutors to younger students in grades one and two. Tney prepared dramatic readings, puppet shows and general discussions which proved to be mutually beneficial to both participants since

both students in these dyads improved in their reading abilities and in their attitudes towards school and reading in particular.

These items are representative of the activities planned throughout the program which effectively encouraged language development as evidenced by teacher observation and by the standardized measures noted in the Appendix.

COGNITIVE AND SOCIAL DEVELOPMENT

By observing a child's way of solving problems it is possible to estimate that individual's levels of development (cognitive, social, etc.) Based on this assumption, specific tasks were developed derived from Piaget's theory to assess students' cognitive development. Specific curricular objectives were identified which were similar to these tasks, but placed in a meaningful and relevant context. Note was made of students' increasing abilities to group objects and events on a variety of tasks. Activities throughout the year were planned to encourage this in addition to incidental events which were drawn upon for further experiences with this concern in mind. As evidenced by teacher observation, the goal is being achieved. Since it is acknowledged by the project staff that how to approach these tasks cannot be directly taught, it is through the experiences provided and the teacher's constant questioning that the student is encouraged to think through reasons for his/her hypotheses and to note cause and effect.

The entire program is based on the principle of naturalistic exploration. One aspect of this environment is that students are encouraged to approach new projects and problems. Through these activities the students develop more abstract ways of

thinking, progressing along Piaget's hierarchy of cognitive abilities. Systematically throughout the year, note is made of the child's levels of development and new tasks are presented based on the child's levels of operation. Each child's progress has been noted on project-designed records which the teachers have used as bases for their planning, thereby effectively individualizing instruction to meet each child's abilities and needs. The students continue to develop systematically and rapidly and all students met the established goal as noted by their progress on each student's individual record.

A trip sponsored by the Parents Association and funded through the students' booth at the Fair to Washington, D.C. served many purposes, including social ones. The children had the need to get along with their peers for an extended period of time -- and with strangers as well. They survived the experience and learned a great deal through it, in addition to enjoying it!

The only standardized measure of concept development used was the Boehm Test of Basic Concepts which was administered to all the children in the pre-kindergarten classes. This was given in their dominant language, the results of which are presented in the Appendix to this report.

MATHEMATICS

For students in the pre-kindergarten, mathematics instruction was conducted in their dominant language. The first and second grades were taught in French, Spanish or Yiddish, depending on their class placement. In the third grade, English was used. The fourth and fifth graders were taught in French, Spanish or Yiddish using the specific skills and concepts enumerated in the New York City Board of Education Mathematics curriculum guides and Piaget's stages of cognitive development as guides in planning activities based on students' stages of development. Emphasis was placed on understanding the concept -- not on memorization. Through the language alternation between native and second language, the students develop bilingual abilities in the technical language of mathematics.

To accomplish the designated goals, math centers with preplanned activities were created, providing for the students' concept development in practical situations in small groups. Students cooperatively assisted their peers in these activities. In addition, questioning in teaching was focused on four specific types, namely: Open-ended Questions; Directed Questions; Justification Questions and Problem Solving Questions. The goal throughout was to encourage students to use language

to explain their responses while simultaneously clarifying their own understanding of given concepts. This approach proved to be most effective.

Standardized tests in English were given to all groups from kindergarten through grade five. The results are reported in the Appendix by grade level. They indicate that all groups across language dominance are at least at grade level when compared to a normative group. The long-term advantages of the groups involved in this program suggest the effectiveness of instruction.

SCIENCE

Depending on the grade, science was taught throughout the year in either English, or French, Spanish and Yiddish. The rotation system, similar to that described above in the section on Mathematics provides the opportunity for students to become bilingually competent in the technical language of science. The topics included in the New York City Science curriculum guide were used as a basis for curriculum development for the Bilingual Center. The teachers encouraged students to use the Scientific Method as an approach to understanding and describing. Specifically they were concerned with going from observation of an event to recording, then reporting, then generalizing from that event to others based on classifications and interpretations. Again, the concern was for students to understand the process or concepts, not merely to memorize predetermined data. The same procedure for developing all other skills/concepts was followed whereby students were actively involved in working with materials to complete a project. Thus, "science" is not a separate area but rather integrated throughout the day through the presence and requisite care for animals and plants which were in the classrooms. 85% of the children met the criterion on the established objectives in this area.

This aspect of the curriculum was especially important to both teachers and students due to the inquiry method and the aspects of daily life which were considered. Students developed insights into the effect of the environment on activities they participated in. These students are certainly learning a great deal through varied activities which could not be directly taught to them. The teachers are truly becoming guides and encourage this development. Activities as diverse as club time in which students develop areas of interest and explore new activities as an important source for developing scientific concepts.

A wide variety of activities originated in the science portion of the curriculum. A District Science Fair awarded both first and second place medals to students attending the Bilingual Center. The projects demonstrated at this fair display a sophisticated understanding of scientific concepts. As Science Fair participants, the students have the opportunity and the need to convey their knowledge and enthusiasm to other students in the district as well as to the judges. This feature certainly aids in the development of students' attitudes as well as their development of an understanding of the scientific concepts they are dealing with. Students have been involved in a Science Conservation Energy Project, as part of the Henry Street Settle-

ment program which focuses on science/energy, the arts are integrated in the concerns of energy production, including the participation of artists, writers and dancers. A Science Through the Arts program which was sponsored by the Bilingual Students Services helped the two winners in the Science Fair. Similar activities for the French component will be provided next year through the New York State Council on the Arts.

CULTURE STUDIES

To help students develop positive self-concepts and a respect for the cultures studied, a biographical approach to the study of cultures represented in the student population at the Center is conducted (American/Puerto Rican/Haitian/Hebrew History). The emphasis was on developing significant concepts drawn from the disciplines of the social sciences, not to memorize unrelated facts. Language was chosen based on the topic under consideration. Art and music were included in these discussions, integrating the variety of aspects of the culture of each group. Students were encouraged to develop problem solving techniques through their discussion concurrent with their developing interpersonal relationships.

Cultural awareness of two groups is being developed in the children with helpful assistance from parents in preparation of ethnic specialities and discussion of celebrations and other traditions observed in West Indian, Puerto Rican, American, French, Hassidic, and Spanish homes. Each of the events was also used as part of the preparation of costumes, materials, foods and songs for a repetition of the program's annual multilingual/multicultural fair. Other activities planned to experience aspects of different cultures included a trip to Washington, D.C.

A trip sponsored by the Parents' Association with funds collected by the students' booth at the Cultural Fair to visit Washington, D.C. served many important purposes. In addition to providing direct experiences with American traditions, the students developed an understanding of travel beyond their immediate community and many social concepts as well.

A Haitian Cultural Festival held at the headquarters of the Board of Education of New York City included major participation by students at the Bilingual Center. The program's observance of Haitian Flag Day attracted approximately 1,000 people. An article describing the observance was included in a Haitian newspaper. The interest in cultures has certainly been espoused by this project, and has seen its positive impact on both students and their parents.

ADULT OBJECTIVES

Teachers

1. 90% of the participating teachers will have completed a university program in Bilingual Education or E.S.L.

2. Teacher skills in Bilingual Education and lesson plans will improve as measured by observations of their supervisors and quality of teacher-made materials.

3. Teacher relationships with parents and community will improve, as measured by an increase in the number of times teachers voluntarily engage in community functions, such as trips, special cultural activities, bilingual newsletters.

4. Teachers will acquire specialized knowledge of evaluation and research techniques related to the field of bilingual education.

Paraprofessionals

1. A selected number of paraprofessionals will have received a regular New York City license in Bilingual Education.

2. All paraprofessionals who remain in the program for a five year period of time will have learned effective means of assisting teachers, children, and the process of education in general. They will be rated both by their supervising teachers and by a record of their activities.

3. Paraprofessionals will take the initiative in starting and leading community action groups with intra- and extra-curricular affairs.

4. Paraprofessionals will have developed effective means to train parents to help children with specific school-related tasks.

Parents and Community

1. Will have a better relationship with school as evidenced by greater and more frequent attendance at P.T.A. meetings, greater use of family rooms at the Bilingual Center, and school sponsored activities and workshops, greater willingness to assist teachers with special activities, trips, etc.

2. Will have acquired a knowledge of a second language and its culture as judged by fellow parents and community members of the second language group.

3. Will have more positive attitudes towards bilingual schooling and use of both Spanish/English, French/English and Yiddish/English as measured by attitude questionnaires and a greater willingness to enroll their children in the program.

4. A demand by the community for expansion of the bilingual program to include a greater number of children and a wider range of educational levels.

5. A more positive self-image as members of an ethnic group who value being members of a multilingual, multiethnic society.

6. Parents wll see themselves as vital forces in their children's education, as evidenced by serving as tutors for their children, by implementing suggestions of paraprofessionals and teachers, and by making suggestions in planning the Bilingual Center.

Measurement of Adult Objectives

The teachers have enrolled in graduate programs in Bilingual Education from which all but two have graduated to date. From their courses they are able to develop an understanding of

language and how it develops, in addition to a variety of effective approaches which facilitate this development. This is helpful in preparing the proposal and in curriculum development occurring on a daily basis when the professional staff, assisted by community representatives participate in the designation of the goals and suggested curricular activities. As part of the staff development program prior to the students' return to school in the Fall, the objectives of the program and the evaluation report for the preceeding year were discussed. During the year, staff meetings include a discussion of objectives and a sharing of effective techniques and materials. In addition, the progress of the project is constantly being evaluated. While each objective is continually open to question if it seems obscure or infeasible, this is a project in which the development and implementation of its objectives are truly aspects of the same process. Therefore this is not only a project which looks good on paper, but is doing what it said it would do.

The program's sharing of curricular materials with supervisors and teachers in the district has been recognized, thereby serving as a model for curriculum development in other district schools. The staff participated in the first Haitian Educational Conference, thereby serving as a model beyond the district level.

This aspect of providing a model to the profession is one which has been recommended in previous reports due to the effectiveness of this project.

The paraprofessionals continue to serve a critical role in the implementation of the program. Since they work closely with the teachers and the director in planning activities and assessing development, it is possible to plan most of the day with small group interactions with teachers and paraprofessionals alternating between groups. In addition, their progress in their college programs assists them in their planning of activities for the children. Their commitment to the program is an important factor in the effectiveness of the program -- both in their work with the teachers and the parents. Most of the paraprofessionals are enrolled in programs preparing them for certification and licensing as Bilingual Teachers through participation in undergraduate programs in Bilingual Education.

Parents participate daily, averaging four per day, by volunteering to work with small groups, enriching the curriculum through their involvement. The weekly parents' meetings continue to be effective in bringing the parents together to discuss issues of common concern in addition to the language instruction component. Attendance continues to be good with

active participation by most, a significant finding considering the voluntary nature of this commitment. The applications for enrollment in this program far exceed available space, a concrete indication of the parents' view of the program's effectiveness. At the end of the current school year there were hundreds of names of students desiring places in the program when vacancies develop, an important indication of the results achieved by the staff of the program.

This year saw the institutionalization of the program wherein the local community school board voted to establish the program as a Bilingual School for the district with provision for staff development in bilingual education throughout the district. The director was named the principal of the school. The recognition of the effectiveness of the program by the local educational officials was long sought and certainly warranted. Thus it is rewarding to note the recognition of its effectiveness by the local school board, and its identification of the guiding light behind the program's success, its director.

SUMMARY

The bilingual program has been effectively implemented in public and non-public schools with students ranging in grade placement from pre-kindergarten through fifth grade. The students are developing bilingual abilities in French, Spanish, or Yiddish and English.

Appropriate curricular decisions were made based on knowledge of theories of cognitive and linguistic development, particularly as applied to the needs of the student population in their developing bilingual abilities, as well as increasingly complex cognitive concerns. The newly added international components assist in developing cultural awareness as well as encouraging the development of linguistic and cognitive abilities identified.

The staff's cooperative development and sharing of materials and curricular concerns fostered the achievement of goals identified in language, mathematics, science, social studies and cognitive development in general.

The students are, by all measures, profiting from the experiences as they continue to develop their abilities identified in the program's objectives as well as in comparisons with

comparable groups on standardized measures. Of significant importance is that the children enjoy attending school, an attitude which pervades the entire building and each classroom.

The staff development concerns are being fulfilled with most teachers participating in advanced programs related to their professional concerns. Additional development is provided through regular staff meetings as well as regular clinical supervisory practices.

Parent involvement continues at a very high level, another important component contributing to the effectiveness of the program.

In recognition of the effectiveness of the Bilingual Center's program, the Local School Board voted to establish the program as the Bilingual School in the District, and for the Director to serve as the school's principal as well as the coordinator of bilingual education in the district.

In sum, the program is an excellent one based on standardized as well as informal measures, due in large measure to the director. It should continue to serve as a model to other bilingual projects in the city and the nation.

RECOMMENDATIONS

1. The high caliber of professionalism present in the staff, yet the limited time available for staff development and curriculum development suggests the need for additional funding for this important component.

2. Now that there is sufficient space for the students and the staff, there is a need for additional specialists as a librarian, physical education teachers, music and art teachers and teacher trainers are needed to help make the most effective use of all available space.

3. The need for a full-time librarian in this program becomes increasingly essential as the older students require more technical information-sources, all students require professional story-telling and all students and parents depend on the selections available in the library for variety in reading materials. Recognizing the role of librarian as a facilitator for locating appropriate published materials, the staff and the community (students and parents) need the help of such a specialist to help sustain the students' interests.

4. The impact of this program on the participants is so impressive that it should be expanded to serve the needs of a wider

population.

5. Additional dissemination and participation at professional conferences should be encouraged.

6. Recognizing the need for the completion of an increasing number of reports, especially with a larger student body, a full-time secretary is needed.

7. Carefully designed research projects should be conducted to investigate the most effective practices of the program, and to develop assessment procedures to determine language abilities of bilingual students as well as to assess bilingual language development.

APPENDIX

ENGLISH READING TESTS

Table 1

Kindergarten Total Bilingual Center English Reading Results

Mean Percentile Rankings

Metropolitan Achievement Test - Primer (Form F)

June, 19-8

Language Dominance	English N=33	French N=20	Spanish N=27	Total Group N=80
Listening for Sounds	85.6	89	77.5	83.7
Reading	85.9	94.8	75.3	84.5

Table 2

Kindergarten Non-Public School

Metropolitan Achievement Test

Primer

Mean Percentile Rankings

May, 1978

Total Group (Yiddish Dominant)	N=44
Listening for Sounds	70.3
Reading	49.9

Table 3

First Grade Total Bilingual Center

Metropolitan Achievement Test - Primary I

(Form F)

Mean Grade Equivalents

June 1978

Language Dominance	English N=32	French N=58	Spanish N=41	Total Group N=131
Word Knowledge	2.8	1.8	1.9	2.1
Word Analysis	2.6	1.9	1.9	2.1
Reading	2.4	1.9	1.9	2.0
Total Reading	2.5	1.9	1.9	2.1

Table 4

First Grade Non-Public School

Metropolitan Achievement Test

(Primer)

Mean Grade Equivalents

May 1978

Test Section	Yiddish Dominant N= 41
Word Knowledge	2.3
Word Analysis	2.3
Reading	2.2
Total Reading	2.2

Table 5

Second Grade Total Bilingual Center

Metropolitan Achievement Test

(Primary II)

Mean Grade Equivalents

June 1978

Language Dominance	English N=42	French N=41	Spanish N=30	Total Group N=113
Word Knowledge	3.8	3.2	3.0	3.4
Word Analysis	3.2	3.3	2.8	3.1
Reading	3.6	3.0	2.8	3.2
Total Reading	3.8	3.1	2.8	3.3

Table 6

Second Grade Non-Public School

Metropolitan Achievement Test

(Primary II)

Test Section	Yiddish Dominant May 1978 N=46	N=44	Mean Change
Word Knowledge	3.0	3.3	+.3
Word Analysis	4.0	4.1	+.1
Reading	2.8	3.2	+.4
Total Reading	2.9	3.3	+.4

Table 7

THIRD GRADE TOTAL BILINGUAL CENTER

Metropolitan Achievement Test

Elementary - Form H

Mean Grade Equivalents

June 1978

Language Dominance	English N=35	French N=26	Spanish N=6	Total N=67
Word Knowledge	4.5	3.9	3.7	4.2
Reading	5.1	4.5	3.9	4.8
Total Reading	4.7	4.1	3.7	4.4

Table 8

FOURTH GRADE TOTAL BILINGUAL CENTER

Metropolitan Achievement Test

Mean Grade Equivalents

June 1978

Language Dominance	English N=22	French N=22	Spanish N=26	Total N=71
Word Knowledge	5.5	5.0	4.4	4.9
Reading	5.9	5.5	4.6	5.3
Total Reading	5.5	5.2	4.5	5.0

Table 9

FOURTH GRADE NON-PUBLIC SCHOOL

Metropolitan Achievement Test

Elementary

Test Section	Yiddish Dominant		
	January 1978 N=32	May 1978 N=32	Mean Change
Word Knowledge	4.7	4.7	0
Reading	4.5	5.2	+.7
Total Reading	4.6	4.8	+.2

Table 10

FIFTH GRADE TOTAL BILINGUAL CENTER

Metropolitan Achievement Test

Mean Grade Equivalents

June 1978

Test Section	English N=19	French N=23	Spanish N=26	Total Group N=68
Word Knowledge	7.4	6.5	6.6	6.8
Reading	7.8	6.9	6.8	7.1
Total Reading	7.6	6.7	6.7	6.9

Table 11

FIFTH GRADE NON-PUBLIC SCHOOL

Metropolitan Achievement Test

Mean Grade Equivalents

Test Section	Yiddish Dominant		
	January 1978 N=28	May 1978 N=15	Mean Change
Word Knowledge	5.1	5.7	+.6
Reading	5.5	6.1	+.6
Total Reading	5.2	5.8	+.6

Table 12

SECOND GRADE NEW YORK CITY READING TEST

Bilingual Center

April 1978

Test Section	English N=31	French N=46	Spanish N=33	Total N=110
Vocabulary	2.9	2.6	1.8	2.4
Comprehension	3.3	2.7	2.1	2.7
Total	3.0	2.8	2.0	2.6

Table 13

THIRD GRADE BILINGUAL CENTER

New York City Reading Test

April 1978

Test Section	English N=32	French N=26	Spanish N=7	Total Group N=65
Vocabulary	4.4	3.7	3.2	4.0
Comprehension	4.8	4.6	3.2	4.6
Total	4.8	4.1	3.5	4.4

Table 14

FOURTH GRADE BILINGUAL CENTER

New York City Reading Test

April 1978

Test Section	English N=19	French N=24	Spanish N=26	Total Group N=69
Vocabulary	5.3	5.2	4.7	5.1
Comprehension	5.5	5.6	4.5	5.1
Total	5.4	5.4	4.6	5.1

Table 15

FIFTH GRADE BILINGUAL CENTER

New York City Reading Test

April 1978

Test Section	English N=17	French N=23	Spanish N=26	Total Group N=66
Vocabulary	7.9	7.9	6.2	6.7
Comprehension	8.3	8.3	7.4	7.8
Total	7.9	7.9	6.7	7.2

READING RESULTS
English Dominant

Table 16

SECOND GRADE - ENGLISH DOMINANT

Metropolitan Achievement Test

Primary II

Mean Grade Equivalents

Test Section	October 1977 Form H N=19	June 1978 N=42	Mean Change
Word Knowledge	2.7	3.8	+1.1
Word Analysis	2.9	3.2	+ .3
Reading	3.1	3.6	+ .5
Total Reading	3.0	3.8	+ .8

Table 17

THIRD GRADE BILINGUAL CENTER
ENGLISH DOMINANT
Metropolitan Achievement Test
Elementary

Mean Grade Equivalents

Test Section	October 1977 Form G N=24	June 1978 Form H N=35	Mean Change
Word Knowledge	4.6	4.5	-.1
Reading	4.6	5.1	+.5
Total Reading	4.5	4.7	+.2

Table 18

FOURTH GRADE BILINGUAL CENTER
ENGLISH DOMINANT
Metropolitan Achievement Test

Mean Grade Equivalents

Test Section	October 1977 N=14	June 1978 N=22	Mean Change
Word Knowledge	4.8	5.5	+.7
Reading	4.7	5.9	+1.2
Total Reading	4.6	5.5	+.9

Table 19

FIFTH GRADE - BILINGUAL CENTER
ENGLISH DOMINANT
Metropolitan Achievement Test

Mean Grade Equivalents

Test Section	October 1977 N=14	May 1978 N=19	Mean Change
Word Knowledge	6.7	7.4	+.7
Reading	6.8	7.8	+1.0
Total Reading	6.1	7.6	+1.5

Table 20

SECOND GRADE - BILINGUAL CENTER
FRENCH DOMINANT

Metropolitan Achievement Test

Primary II

Mean Grade Equivalents

TEST SECTION	October 1977 Form H N=18	June 1978 N=41	Mean Change
Word Knowledge	2.6	3.2	+.6
Word Analysis	2.6	3.3	+.7
Reading	2.5	3.0	+.5
Total Reading	2.6	3.1	+.5

Table 21

THIRD GRADE - BILINGUAL CENTER
FRENCH DOMINANT
Metropolitan Achievement Test

Elementary

Mean Grade Equivalents

Test Section	October 1977 Form G N=25	June 1978 Form H N=26	Mean Change
Word Knowledge	3.5	3.9	+.4
Reading	3.5	4.5	+1.0
Total Reading	3.4	4.1	+.7

Table 22

FOURTH GRADE -BILINGUAL CENTER
FRENCH DOMINANT
Metropolitan Achievement Test

Mean Grade Equivalents

Test Section	October 1977 N=28	June 1978 N=23	Mean Change
Word Knowledge	4.4	5.0	+.6
Reading	5.0	5.5	+.5
Total Reading	4.6	5.2	+.6

Table 23

FIFTH GRADE - BILINGUAL CENTER

FRENCH DOMINANT

Metropolitan Achievement Test

Intermediate

Mean Grade Equivalents

Test Section	October 1977 N=23	June 1978 N=23	Mean Change
Word Knowledge	5.3	6.5	+1.2
Reading	5.8	6.9	+1.1
Total Reading	5.9	6.7	+.8

Table 25

THIRD GRADE - BILINGUAL CENTER

SPANISH DOMINANT

Metropolitan Achievement Test

Elementary

Mean Grade Equivalents

Test Section	October 1977 Form G N=11	June 1978 Form H N=6	Mean Change
Word Knowledge	3.8	3.7	-.1
Reading	4.3	3.9	-.4
Total Reading	3.9	3.7	-.2

Table 26

FOURTH GRADE - BILINGUAL CENTER
SPANISH DOMINANT

Metropolitan Achievement Test
Elementary

Mean Grade Equivalents

Test Section	October 1977 N=23	June 1978 N=26	Mean Change
Word Knowledge	3.5	4.4	+.9
Reading	3.4	4.6	+1.2
Total Reading	3.4	4.5	+1.1

Table 27

FIFTH GRADE - BILINGUAL CENTER

SPANISH DOMINANT

Metropolitan Achievement Test

Intermediate

Mean Grade Equivalents

Test Section	October 1977 N=30	June 1978 N=26	Mean Change
Word Knowledge	6.3	6.6	+.3
Reading	5.2	6.8	+1.6
Total Reading	5.3	6.7	+1.4

FRENCH READING TESTS

Table 28

KINDERGARTEN FRENCH READING

Program Prepared

Maximum = 50

Mean Raw Scores

Language Dominance	February 1978	June 1978
English	41 (N=5)	42.2 (N=9)
French	41 (N=20)	38.6 (N=42)
Total Group	41 (N=25)	39.2 (N=51)

Table 29

FIRST GRADE FRENCH READING

Program Prepared

Maximum = 38

Mean Raw Scores

Language Dominance	February 1978	June 1978	Mean Change
English	24.2 N=5	31.6 N=7	+7.4
French	23.7 N=28	26.7 N=59	+3.0
Total Group	23.9 N=33	27.2 N=66	+3.3

Table 30

SECOND GRADE FRENCH READING

Program Prepared Test

Maximum = 84

Mean Raw Scores

Language Dominance	February 1978	June 1978	Mean Change
English	55.3 N=10	56.8 N=12	+1.5
French	58.6 N=16	59 N=40	+.4
Total Group	56.8 N=26	58.5 N=52	+1.3

Table 31

THIRD GRADE FRENCH READING

Program Prepared Test

Maximum = 95

Mean Raw Socres

Language Dominance	February 1978	June 1978	Mean Change
English	53.4 N= 8	51.7 N= 9	-1.7
French	69.3 N=27	71.2 N=26	+1.3
Total Group	65.7 N=35	66.2 N=35	+ .5

Table 32

FOURTH GRADE FRENCH READING

Program Prepared Test

Maximum Possible = 108

Mean Raw Scores

Language Dominance	February 1978	June 1978	Mean Change
English	76 N=7	82 N=12	+6.0
French	78.5 N=24	90.9 N=20	+12.4
Total Group	77.9 N=31	87.5 N=32	+9.6

Table 33

SECOND GRADE SPANISH READING TEST

Program Prepared

Maximum Possible =90

Mean Raw Scores

Language Dominance	February 1978	June 1978	Mean Change
English	32.6 N=10	54.2 N=23	+19.6
Spanish	42.6 N=18	67.7 N=32	+25.1
Total Group	39 N=28	62 N=55	+23

Table 34

THIRD GRADE SPANISH READING

Program Prepared

Maximum Possible = 88

Mean Raw Score

Language Dominance	February 1978	June 1978	Mean Change
English	32.7 N=19	41.4 N=25	+9.3
Spanish	43.6 N=12	54.4 N=7	+10.8
Total Group	42.4 N=27	44.3 N=32	+1.9

Table 35

FOURTH GRADE SPANISH READING

Program Prepared

Maximum Possible = 88

Mean Raw Scores

Language Dominance	February 1978	June 1978	Mean Change
English	31.3 N=8	28.1 N=8	-3.2
Spanish	55.1 N=24	58.3 N=26	+3.3
Total Group	49.2 N=32	51.2 N=34	+2.0

Table 36

FIFTH GRADE SPANISH READING

Program Prepared

Maximum Possible = 127

Mean Raw Scores

Language Dominance	February 1978	June 1978
English	52.4 N=5	46.5 N=8
Spanish	69.8 N=28	69.4 N=26
Total Group	67.2 N=33	64 N=34

CONCEPT DEVELOPMENT

Table 37

PREKINDERGARTEN BILINGUAL CENTER

Boehm Test of Basic Concepts

Mean Raw Scores

Language Dominance	June 1978
English N=18	44.3
French N=20	41.9
Spanish N=16	43.6
Total Group N=54	43.2

Youngest normative group: A/Low Socioeconomic level

Mean = 28.4 (SE_m=3.0)

Table 38

PREKINDERGARTEN NONPUBLIC SCHOOL

Boehm Test of Basic Concepts

Mean Raw Scores*

Language Dominance	February 1978 Form B N=42	May 1978 Form A N=58
Yiddish Dominant	31.8	25.7

*Youngest normative data: K/Low socioeconomic level

Form A Mean = 28.4 SE_m = 3.0

Form B Mean = 31.6 SE_m = 3.4

MATHEMATICS

Table 39

KINDERGARTEN MATH RESULTS

Murphy-Durrell

Mean Percentile Rankings

June 1978

Language Dominance		Numbers
English	N=33	79
French	N=20	83.5
Spanish	N=27	83.5
Total Group	N=80	81.7

Table 40

FIRST GRADE MATH RESULTS

Metropolitan Achievement Test

Primary I
Form F

Mean Grade Equivalents

June 1978

Test Section	English N= 32	French N=58	Spanish N=41	Total N=131
Total Mathematics	2.4	1.7	2.0	2.0

Table 41

SECOND GRADE MATH - BILINGUAL CENTER

Metropolitan Achievement Test

Primary II

Mean Grade Equivalents

June 1978

Language Dominance	English N=42	French N=41	Spanish N=30	Total Group N=113
Math Computation	3.8	3.9	3.5	3.8
Math Concepts	4.1	3.8	3.2	3.7
Math Problem Solving	3.8	3.2	3.2	3.5
Total Math	3.8	3.7	3.2	3.6

Table 42

THIRD GRADE BILINGUAL CENTER MATH

Metropolitan Achievement Test

Elementary

Mean Grade Equivalents

June 1978

Language Dominance	English N=35	French N=26	Spanish N=6	Total Group N=67
Math Computation	5.0	4.8	4.9	4.9
Math Concepts	4.8	4.5	4.1	4.6
Math Problem Solving	4.9	4.4	3.8	4.6
Total Math	4.9	4.6	4.4	4.7

Table 44

FOURTH GRADE BILINGUAL CENTER MATH

Metropolitan Achievement Test

Mean Grade Equivalents

June 1978

Language Dominance	English N=22	French N=23	Spanish N=26	Total Group N=71
Math Computation	6.4	7.0	5.0	6.1
Math Concepts	6.8	6.5	5.0	6.1
Math Problem Solving	6.0	6.7	5.1	5.9
Total Math	6.2	6.7	5.1	6.0

Table 45

FIFTH GRADE BILINGUAL CENTER MATH

Metropolitan Achievement Test

Mean Grade Equivalents

June 1978

Language Dominance	English N=19	French N=23	Spanish N=26	Total Group N=68
Computation	8.3	7.6	7.3	7.7
Concepts	8.3	7.3	7.0	7.5
Problem Solving	7.6	6.7	6.8	7.0
Total	8.1	7.1	7.0	7.3

Table 46

FIRST GRADE NON-PUBLIC SCHOOL MATH

YIDDISH DOMINANT

Metropolitan Achievement Test
Primary I
Mean Grade Equivalent

Test Section	May 1978 N=40
Total Math	2.5

Table 47

SECOND GRADE NON-PUBLIC SCHOOL MATH

YIDDISH DOMINANT

Metropolitan Achievement Test
Primary II

Mean Grade Equivalents

May 1978

Test Section	N=45
Math Computation	3.5
Math Concepts	3.5
Math Problem Solving	3.6
Total Math	3.5

Table 48

FOURTH GRADE NON-PUBLIC SCHOOL MATH

YIDDISH DOMINANT

Metropolitan Achievement Test

Elementary

Mean Grade Equivalents

May 1978

Test Section	N=15
Math Computation	5.0
Math Concepts	4.7
Math Problem Solving	4.7
Total Math	4.7

Table 49

FIFTH GRADE NON-PUBLIC SCHOOL MATH

YIDDISH DOMINANT

Metropolitan Achievement Test

Intermediate

Mean Grade Equivalents

May 1978

Test Section	N=15
Computation	6.8
Concepts	6.6
Problem Solving	5.9
Total Math	6.5

Table 50

SECOND GRADE ENGLISH DOMINANT MATH TESTS

Metropolitan Achievement Test

Primary II

Mean Grade Equivalents

Test Section	October 1977 N=19	June 1978 N=42	Mean Change
Math Computation	2.7	3.8	+1.1
Math Concepts	3.1	4.1	+1.0
Math Problem Solving	3.0	3.8	+.8
Total Math	2.9	3.8	+.9

Table 51

THIRD GRADE ENGLISH DOMINANT MATH

Metropolitan Achievement Test

Elementary

Mean Grade Equivalents

Test Section	October 1977 Form G N=24	June 1978 Form H N=35	Mean Change
Math Computation	3.5	5.0	+1.5
Math Concepts	4.1	4.8	+.7
Math Problem Solving	3.7	4.9	+1.2
Total Math	3.8	4.9	+1.1

Table 52

FOURTH GRADE BILINGUAL CENTER MATH
ENGLISH DOMINANT
Metropolitan Achievement Test

Mean Grade Equivalents

Test Section	October 1977 N=14	June 1978 N=22	Mean Change
Math Computation	4.6	6.4	+1.8
Math Concepts	5.0	6.8	+1.8
Math Problem Solving	4.7	6.0	+1.3
Total Math	4.8	6.2	+1.4

Table 53

FIFTH GRADE BILINGUAL CENTER MATH
ENGLISH DOMINANT
Metropolitan Achievement Test

Mean Grade Equivalents

Test Section	October 1977 N=14	June 1978 N=19	Mean Change
Computation	6.8	8.3	+1.5
Concepts	7.2	8.3	+1.1
Problem Solving	6.3	7.6	+1.3
Total Math	6.8	8.1	+1.3

Table 54

SECOND GRADE FRENCH DOMINANT BILINGUAL CENTER

Metropolitan Achievement Test

Primary II

Mean Grade Equivalents

Test Section	October 1977 N=18	June 1978 N=41	Mean Change
Math Computation	2.8	3.9	+1.1
Math Concepts	3.0	3.8	+.8
Math Problem Solving	2.9	3.5	+.6
Total Math	2.8	3.6	+.9

Table 55

THIRD GRADE BILINGUAL CENTER MATH

FRENCH DOMINANT

Metropolitan Achievement Test

Elementary

Mean Grade Equivalents

Test Section	October 1977 Form G N=25	June 1978 Form H N=26	Mean Change
Math Computation	3.4	4.8	+1.4
Math Concepts	3.6	4.5	+.9
Math Problem Solving	3.4	4.4	+1.0
Total Math	3.4	4.6	+1.2

Table 56

FOURTH GRADE BILINGUAL CENTER MATH

FRENCH DOMINANT

Metropolitan Achievement Test

Mean Grade Equivalents

Test Section	October 1977 N=28	June 1978 N=23	Mean Change
Math Computation	5.0	7.0	+2.0
Math Concepts	5.0	6.5	+1.5
Math Problem Solving	4.8	6.7	+1.9
Total Math	5.0	6.7	+1.7

Table 57

FIFTH GRADE BILINGUAL CENTER MATH

FRENCH DOMINANT

Metropolitan Achievement Test

Mean Grade Equivalent

Test Section	October 1977 N=23	June 1978 N=23	Mean Change
Math Computation	5.8	7.6	+1.8
Math Concepts	5.8	7.3	+1.5
Math Problem Solving	5.6	6.7	+1.1
Math Total	5.8	7.1	+1.3

Table 58

SECOND GRADE BILINGUAL CENTER MATH TESTS

SPANISH DOMINANT

Metropolitan Achievement Test

Primary II

Mean Grade Equivalents

Test Section	October 1977 N=21	June 1978 N=30	Mean Change
Math Computation	2.4	3.5	+1.1
Math Concepts	1.9	3.2	+1.3
Math Problem Solving	2.4	3.2	+.8
Total Math	2.2	3.2	+1.0

Table 59

THIRD GRADE BILINGUAL CENTER MATH

SPANISH DOMINANT

Metropolitan Achievement Test

Elementary

Mean Grade Equivalents

Test Section	October 1977 Form G N=11	June 1978 Form H N=6	Mean Change
Math Computation	3.5	4.9	+1.4
Math Concepts	3.7	4.1	+.4
Math Problem Solving	3.5	3.8	+.3
Total Math	3.5	4.4	+.9

Table 60

FOURTH GRADE BILINGUAL CENTER MATH

SPANISH DOMINANT

Metropolitan Achievement Test

Mean Grade Equivalents

Test Section	October 1977 N=23	June 1978 N=26	Mean Change
Math Computation	3.7	5.0	+1.3
Math Concepts	3.8	5.0	+1.2
Math Problem Solving	3.8	5.1	+1.3
Total Math	3.7	5.1	+1.4

Table 61

FIFTH GRADE BILINGUAL CENTER MATH

SPANISH DOMINANT

Metropolitan Achievement Test

Mean Grade Equivalents

Test Section	October 1977 N=30	June 1978 N=26	Mean Change
Computation	5.8	7.3	+1.5
Concepts	5.9	7.0	+1.1
Problem Solving	5.5	6.8	+1.3
Total	5.7	7.0	+1.3

Table 62

SECOND GRADE NONPUBLIC SCHOOL MATH

YIDDISH DOMINANT

Metropolitan Achievement Test

Primary II

Mean Grade Equivalents

Test Section	N=46	N=45 May 1978	Mean Change
Math Computation	3.0	3.5	+.5
Math Concepts	2.6	3.5	+.9
Math Problem Solving	2.5	3.6	+1.1
Total Math	2.5	3.5	+1.0

Table 63

FOURTH GRADE NONPUBLIC SCHOOL MATH

YIDDISH DOMINANT

Metropolitan Achievement Test
Elementary

Mean Grade Equivalents

Test Section	January 1978 N=32	May 1978 N=15
Math Computation	5.1	5.0
Math Concepts	5.3	4.7
Math Problem Solving	5.7	4.7
Total Math	5.4	4.7

Table 64

FIFTH GRADE NONPUBLIC SCHOOL MATH

YIDDISH DOMINANT

Metropolitan Achievement Test

Intermediate

Mean Grade Equivalent

Test Section	January 1978 N=29	May 1978 N=15	Mean Change
Computation	5.1	6.8	+1.7
Concepts	5.8	6.6	+.8
Problem Solving	5.6	5.9	+.3
Total Math	5.8	6.5	+.7